UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,313	10/13/2003	Zachary J. Mason	SPARC.096A	3315

20995 7590 12/13/2007
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
GORTAYO, DANGELINO N	

ART UNIT	PAPER NUMBER
2168	

NOTIFICATION DATE	DELIVERY MODE
12/13/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

MAILED

DEC 1 1 2007

Technology Center 2100

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/684,313
Filing Date: October 13, 2003
Appellant(s): MASON, ZACHARY J.

David G. Jankowski
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 9/5/2007 appealing from the Office action mailed 4/10/2007

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,963,867 B2	Ford	12-1999
6,606,619 B2	Ortega	11-1999
6,460,036 B1	Herz	12-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Ford et al. ("Ford" US Patent 6,963,867 B2).

As per claim 11, Ford teaches "A method of distributing credit for a selection event among the nodes of a browse tree," (see Abstract) "the method comprising: determining a total amount of credit to be distributed for the selection event in which a user selected an item within the browse tree;" (column 18 lines 24-33, wherein different actions by the user are used to determine popularity score) "identifying each ancestor node of the selected item within the browse tree;" (column 20 lines 11-21 and column 21 lines 33-43, wherein items are in categories, with a top level category) "dividing said total amount of credit by the number of ancestor nodes of the selected item to determine an amount of credit per ancestor to be distributed for the selection event;" (column 21 lines 58-67, column 22 lines 49-57, column 23 lines 54-62, wherein the score is divided by number of items that match a search within the category) "and assigning said amount of credit per ancestor to the ancestor nodes of the selected item within the browse tree." (column 23 lines 14-30, wherein the category popularity score is computed)

As per claim 12, Ford teaches "said total amount of credit is the same for all selection events." (column 18 lines 12-23)

As per claim 13, Ford teaches "said total amount of credit varies based on the nature of the selection event." (column 18 lines 33-38)

As per claim 14, Ford teaches "the selection event comprises viewing an item and said total amount of credit varies based on the amount of time spent viewing the item." (column 18 lines 26-28)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ortega et al. ("Ortega" US Patent 6,606,619 B2) in view of Herz ("Herz" US Patent 6,460,036 B1).

As per claim 1, Ortega teaches "A computer-implemented method of analyzing browse activity data of users of a database access system,"(see Abstract) "the method comprising: providing a browse tree in which items represented within a database are arranged within item categories over multiple levels of item categories;" (Figure 1B and column 4 lines 52-61, wherein a browse tree of books is provided) "assigning individual user history scores to specific categories of the browse tree based at least in-part on an item selection history of a user, wherein the individual user history scores represent the user's predicted affinities for the corresponding item categories;" (column 10 lines 32-45, wherein individual user history scores are compiled) "assigning collective user history scores to specific categories of the browse tree based at least in-part on item selection histories of a population of users, wherein the collective user history scores represent the predicted affinities of the user population for the corresponding item categories;" (column 10 line 46 – column 11 line 2, wherein scores are based on the collective actions of the community). Ortega does not teach "and evaluating differences

between the individual user history scores and the collective user history scores to generate a relative preference profile for the user, wherein the relative preference profile comprises relative preference scores for specific item categories, said relative preference scores reflecting a degree to which the user's predicted affinity for a category differs from the predicted affinity of the user population for that category."

Herz teaches ""and evaluating differences between the individual user history scores and the collective user history scores to generate a relative preference profile for the user, wherein the relative preference profile comprises relative preference scores for specific item categories, said relative preference scores reflecting a degree to which the user's predicted affinity for a category differs from the predicted affinity of the user population for that category." (Figure 12 reference 1205, column 18 lines 49-55, column 19 line 17 – column 20 line 55, column 27 line 60 – column 28 line 19, wherein a target object score for a user based on the selected user feedback and relevant feedback from all users, based on the object's similarity to other objects and the target's preferences based on other user's preferences). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Ortega's method of identifying an recommending nodes in a browse tree based on previous historical actions with Herz's method of calculating interest in an object based on a user's history and relevant feedback from all users of the system. This gives the advantage of a recommendation system better able to recommend relevant items based on user's personal history and a collective history. The motivation for doing so would be to improve upon a

recommendation system to be more precise and comprehensive in representing a user's taste. (column 2 lines 16-28)

As per claim 4, Ortega teaches "evaluating differences between the individual user history scores and the collective user history scores comprises calculating at least one of a relative entropy function, a dot product function, or a sum of squares function of the individual user history scores relative to the collective user history scores" (column 15 line 55 – column 16 line 4, wherein the distribution between the user and collective scores are found, equivalent to a relative entropy function)

As per claim 5, Ortega teaches "providing personalized item recommendations to the user based at least in-part on the relative preference profile." (column 7 lines 44-48, wherein items are recommended based on the scores)

As per claim 6, Ortega teaches "providing personalized category recommendations to the user based at least in-part on the relative preference profile." (column 7 lines 48-51, wherein leaf categories are presented based on scores)

As per claim 7, Ortega teaches "the item selection history of the user comprises a history of items selected for downloading." (column 12 lines 20-28, wherein the item history comprises purchase history)

As per claim 8, Ortega teaches "the item selection history is based solely on the user's selections of items during browsing of the browse tree." (column 12 lines 20-28, wherein item selection history comprises web activity data)

As per claim 9, Ortega teaches "incrementally updating the relative preference profile of the user in response to new item selection events of the user." (column 15 lines 43-54, wherein the user score is initiated when a user performs actions)

As per claim 10, Ortega teaches "the relative preference profile is updated substantially in real-time as the user interacts with the browse tree." (column 15 lines 43-54, wherein the user score is incremented as the user navigates the browse tree)

As per claim 15, Ortega teaches "a server system coupled to a communications network, said server system providing access to a browse tree in which items represented within a database are arranged within a hierarchy of item categories over multiple levels of item categories, said server system configured to maintain item selection histories for each user within a population of users;" (Figure 2 reference 220 and column 9 lines 46-57, "server components") "and a recommendation module coupled to the server system and configured to access the relative preference profile of the user to make personalized recommendations to the user based at least in-part on the relative preference profile." (Figure 2 reference 290, 292 and column 10 lines 32-45, "category popularity table" and "popular items table"). Ortega does not teach "an analysis module which analyzes at least the item selection histories to predict user affinities for specific item categories of the browse tree, wherein the analysis module additionally generates a relative preference profile for a given user by calculating differences between the user's predicted affinities for specific item categories of the browse tree and the population's predicted affinities for said item categories;"

Herz teaches "an analysis module which analyzes at least the item selection histories to predict user affinities for specific item categories of the browse tree, wherein the analysis module additionally generates a relative preference profile for a given user by calculating differences between the user's predicted affinities for specific item categories of the browse tree and the population's predicted affinities for said item categories;" (Figure 12 reference 1205, column 18 lines 49-55, column 19 line 17 – column 20 line 55, column 27 line 60 – column 28 line 19, wherein a target object score for a user based on the selected user feedback and relevant feedback from all users, based on the object's similarity to other objects and the target's preferences based on other user's preferences). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Ortega's method of identifying an recommending nodes in a browse tree based on previous historical actions with Herz's method of calculating interest in an object based on a user's history and relevant feedback from all users of the system. This gives the advantage of a recommendation system better able to recommend relevant items based on user's personal history and a collective history. The motivation for doing so would be to improve upon a recommendation system to be more precise and comprehensive in representing a user's taste. (column 2 lines 16-28)

Claims 2-3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ortega et al. ("Ortega" US Patent 6,606,619 B2) in view of Herz ("Herz" US Patent 6,460,036 B1) and further in view of Ford et al. ("Ford" US Patent 6,963,867 B2).

As per claim 2, Ortega and Herz disclose claim 1 above. Ortega and Herz do not teach "assigning individual user history scores to specific categories comprises: (a)determining an amount of credit to be distributed for an item selection event in which the user selected an item; and (b) distributing said amount of credit among the item categories under which the item falls, including item categories at multiple levels of the browse tree". Ford teaches "assigning individual user history scores to specific categories comprises: (a) determining an amount of credit to be distributed for an item selection event in which the user selected an item; and (b) distributing said amount of credit among the item categories under which the item falls, including item categories at multiple levels of the browse tree." (column 18 lines 12-37 and column 22 lines 27-57, wherein user actions determine the popularity score and the credits are assigned to top level categories and the items in the category for better searches).

It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Ortega's method of identifying an recommending nodes in a browse tree based on previous historical actions and Herz's method of calculating interest in an object based on a user's history and relevant feedback from all users of the system with Ford's method of assigning a score to a category and its descendants based on user actions. This gives the advantage of a recommendation system better able to recommend relevant items as well as a group of items. The motivation for doing so would be to effectively present groups of items relevant to the user's interest, based on past history. (column 1 lines 32-37)

As per claim 3, Ford teaches "repeating (a) and (b) for each of a plurality of selection events while summing credit values assigned to like item categories."(column 23 lines 14-29, wherein the steps are repeated)

As per claim 16, Ortega and Herz disclose claim 15 above. Ortega and Herz do not teach "the analysis module calculates the user's predicted affinities for the specific item categories based at least in-part by distributing an amount of credit associated with an item selection event among a plurality of item categories under which the selected item falls within the browse tree". Ford teaches "the analysis module calculates the user's predicted affinities for the specific item categories based at least in-part by distributing an amount of credit associated with an item selection event among a plurality of item categories under which the selected item falls within the browse tree." (column 18 lines 12-37 and column 22 lines 27-57, wherein user actions determine the popularity score and the credits are assigned to top level categories and the items in the category for better searches).

It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Ortega's method of identifying an recommending nodes in a browse tree based on previous historical actions and Herz's method of calculating interest in an object based on a user's history and relevant feedback from all users of the system with Ford's method of assigning a score to a category and its descendants based on user actions. This gives the advantage of a recommendation system better able to recommend relevant items as well as a group of items. The motivation for doing so

would be to effectively present groups of items relevant to the user's interest, based on past history. (column 1 lines 32-37)

(10) Response to Argument

With respect to the outstanding 35 U.S.C. 102(e) rejections relating to independent claim 11 and dependent claims 12-14, Applicants argue that Ford (US Patent 6,963,867 B2) does not teach "identifying each ancestor node of the selected item within the browse tree" because the top level categories disclosed by Ford in column 20 lines 11-21 and column 21 lines 33-43 is not the same thing as top level matches determined in connection with a selection event.

The examiner respectfully disagrees with appellant's arguments. The examiner respectfully submits that Ford teaches receiving a search query, interpreted as a selection event, that is then analyzed and applied to categories in column 20 lines 11-21.

> Upon initiation of an All Products search query, the search tool 154 returns a prioritized list of search result items, for each category, using the approach discussed above for the Books category. The top matches from this prioritized list (up to a maximum of three) become the "top-level" matches, for each category, for display in the All Products search results page 300. For these categories 320, 330, 340, 360, 370, as for the Books category 310, lower-level search result items are accessible from the All Products search results page 300 via a hypertext link 328, 338, 348, 368, 378.

The search query can be reasonably interpreted to be a selection event to provide a user with a specified item, and the top level categories are interpreted to be

ancestor nodes from which items belong to. The argument put forth by the applicant, that the ancestor nodes are "determined by the geometry of the browse tree as it relates to the item associated with a selection event" (page 6 lines 1-2) are not strictly disclosed by the limitation in the claim, as the limitation is interpreted by the examiner as identifying the groups from which a selected item belongs to, as determined by the search query, interpreted as a selection event. The search query determines top level categories of items, and therefore teaches the specified limitation.

Regarding Applicant's argument that Ford does not disclose "dividing said total amount of credit by the number of ancestor nodes of the selected item to determine an amount of credit per ancestor to be distributed for the selection event", Examiner respectfully disagrees. As disclosed in Table IV and column 22 lines 50-57, the total score within a category is added up and divided by the number of items, which provides a score for a category.

TABLE IV

Software	Flowers & Gifts	Packaged Travel
A Horse's Tail (59)	Mark Twain Riverboat (57)	Autumn in the Ozarks (51)
Extracts from Adam's Diary (20)	On the Trail of Mark Twain (13)	Bermuda (4)
A Visit to Heaven (11)		Europe—Atlantic Crossing (1)

In another embodiment, the category popularity score is determined by taking the mean value of the constituent top-level result item popularity scores. Applying this approach to the results shown in Table IV leads to category scores

> of 30 (=90/3) for Software, 35 (=70/2) for Flowers & Gifts, and 22 (=66/3) for Packaged Travel. Thus, under this approach, the Flowers & Gifts category results would be displayed in the most prominent position. (column 22 lines 50-57)

As interpreted by the examiner, the score assigned to a top level category, interpreted as an ancestor node, is determined by dividing the total score within the category by the number of items. This score is then assigned to the top level category for a specific instance of a search query, interpreted as a selection event. Because a user must actively select to start a search query for an item, it can be reasonably interpreted as a selection event, and the category score is determined for a search query as it is entered. Therefore, Ford teaches "dividing said total amount of credit by the number of ancestor nodes of the selected item to determine an amount of credit per ancestor to be distributed for the selection event",

Regarding Applicant's argument that Ford does not disclose "assigning said amount of credit per ancestor to the ancestor nodes of the selected item within the browse tree", examiner respectfully disagrees. As outlined above, the category score is determined once a query is received and is dynamic based on the search query, Interpreted as a selection event. Additionally, column 21 lines 57-63 teaches that a query server determines the category score based on the search query terms.

> In a third step 830, the query server 140 determines a category "popularity" score indicative of the significance of the query term to the category. The category popularity scores are generated from some aspect (e.g., the popularity scores) of the constituent search result items in each category.

Additionally, column 18 lines 37-56 teaches that popularity scores assigned to categories are dynamic and can change based on actions by the user based on a predetermined amount of time, and that the score can be reevaluated and assigned to categories. The search query, as outlined before, can be reasonably interpreted as a selection event, as the process of initiating and completing a search query involves the user making the decision to start the search query and send the query to a query server. Therefore, Ford is interpreted to teach "assigning said amount of credit per ancestor to the ancestor nodes of the selected item within the browse tree".

With respect to the outstanding 35 U.S.C. 103(a) rejections relating to independent claims 1 and 15 and dependent claims 2-10 and 16, Applicants argue that Ortega in view of Herz does not teach "evaluating differences between the individual user history scores and the collective user history scores to generate a relative preference profile for the user, wherein the relative preference profile comprises relative preference scores for specific item categories, said relative preference scores reflecting a degree to which the user's predicted affinity for a category differs from the predicted affinity of the user population for that category."

The examiner respectfully disagrees with appellant's arguments. The examiner respectfully submits that Herz teaches in Figure 12 reference 1205, column 19 line 17 and column 20 line 55, and column 27 line 60 – column 28 line 19 that the preference of a user is computed by utilizing specific data made by a user and data from similar user's

through feedback. from users. Specifically, Herz in column 20 lines 25-37 teaches that the similarity distance between user preference and other users' preferences are calculated to predict relevance of an object to a user.

> To effectively apply the smoothing technique, it is necessary to have a definition of the similarity distance between (U, X) and (V, Y), for any users U and V and any target objects X and Y. We have already seen how to define the distance d(X, Y) between two target objects X and Y, given their attributes. We may regard a pair such as (U. X) as an extended object that bears all the attributes of target X and all the attributes of user U; then the distance between (U, X) and (V, Y) may be computed in exactly the same way. This approach requires user U, user V, and all other users to have some attributes of their own stored in the system: for example, age (numeric), social security number (textual), and list of documents previously retrieved (associative). - (Herz, column 20 lines 25-37)

The attribute data for a user is interpreted to be the user history scores of the present invention and is compared to attribute data from other users to find the difference. As stated, the similarity distance between (U,X), representing a user's interest in an object and (V,Y), representing different users' interest in an object, can be used for topical interest. Measuring the distance between (user, target object pairs) is used to provide weights to show the interest in objects, and that the objects are related based on groups, as disclosed in column 21 lines 36-49 of Herz:

> The method described above requires the filtering system to measure distances between (user, target object) pairs, such as the distance between (U, X) and (V, Y). Given the means described earlier for measuring the distance between two multi-attribute profiles, the method must therefore associate a weight with each attribute used in the profile of (user, target object) pairs, that is, with each attribute used to profile either users or target objects. These weights specify the relative importance of the attributes in establishing similarity or difference, and therefore, in determining how topical interest is generalized from one (user, target object) pair to another. Additional weights determine which attributes of a target object contribute to the quality function q, and by how much.

The limitation that Herz discloses teaches evaluating differences between user history scores and collective user history scores, wherein the feedback provided by users of a system is used to produce relevant feedback data weighted with user preference data and the preference data of other users with similar taste.

The instant application, as interpreted by the examiner, teaches that the difference between individual user history scores and collective user history scores is used to generate a profile indicating preference for item categories. As disclosed in Herz column 25 lines 18-35 and lines 48-5, the user has a target profile that is used to evaluate a preference for items organized into clusters.

> Given a target object with target profile P, or alternatively given a search profile P, a hierarchical cluster tree of target objects makes it possible for the system to search efficiently for target objects with target profiles similar to P. It is only necessarily to navigate through the tree, automatically, in search of such target profiles. The system for customized electronic identification of desirable objects begins by considering the largest, top-level clusters, and selects the cluster whose profile is most similar to target profile P. In the event of a near-tie, multiple clusters may be selected. Next, the system considers all subclusters of the selected clusters, and this time selects the subcluster or subclusters whose profiles are closest to target profile P. This refinement process is iterated until the clusters selected on a given step are sufficiently small, and these are the desired clusters of target objects with profiles most similar to target profile P.

As indicated, the similarity distance can be user to search for target objects that are organized in cluster trees. Argued by the appellant in page 10 lines 5-18 of the Appeal Brief is that there is no history score for the user to compare with the collective users history score, yet the passage above contradicts this statement, as a user profile P is used to provide a preference for objects in a cluster by comparing it to profiles of other users with similar taste. As disclosed by Herz, the similarity distance between the

relevance feedback of a user and different group of users is used to identify relevant objects when doing a search. Therefore, Ortega in view of Herz teaches "evaluating differences between the individual user history scores and the collective user history scores to generate a relative preference profile for the user, wherein the relative preference profile comprises relative preference scores for specific item categories, said relative preference scores reflecting a degree to which the user's predicted affinity for a category differs from the predicted affinity of the user population for that category."

Regarding Applicant's argument that Ortega in view of Herz are not related to the present invention, and that there is no motivation to combine the cited references, examiner respectfully disagrees. The teaching of Herz to identify objects relevant to a user based on a user profile by comparing it to other users' profiles is combined with Ortega's process to identify data nodes based on the past history of users. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Both are systems to provide a user with desirable data utilizing data specific to a user. Consequently, the ordinary skilled artisan at the time of the invention would have been motivated to combine the references since Herz's method of finding the difference between user preferences and the preference of

other user's in the system to find preferable data can be incorporated into Ortega's method of identifying data nodes based on historical data collected of users to provide a user with more specific data preferable to a user, since utilizing data from other users can help give the user preferred matches with less intensive amounts of time and work required (Herz, column 1 lines 46-58). By combining Ortega and Herz, the process of finding data matches is shortened when data from other users are compared and analyzed, since this would provide more specific matches.

Conclusion:

It is respectfully submitted that the reference cited . In light of the forgoing arguments, the examiner respectfully requests the honorable board of Appeals and Interferences to sustain the rejection.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

/Dangelino Gortayo/

Dangelino Gortayo, Assistant Examiner, AU 2168

November 29, 2007

Conferees:

Tim Vo, SPE AU 2168

Pierre Vital, SPE 2169

TIM VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

PIERRE VITAL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100